

Health Care Provider Fact Sheet

Disease Name

Hydroxymethylglutaric aciduria (3-OH 3-CH₃ glutaric aciduria)

Acronym

HMG-CoA lyase deficiency or HMG

Disease Classification

Organic Acid Disorder

Variants

No

Variant name

N/A

Symptom onset

Infancy (6 months to 2 years)

Symptoms

Persistent vomiting, lethargy, hypotonia, coma, seizures, apnea, hepatomegaly.

Natural history without treatment

Recurrent episodes of acute illness usually in response to fasting or to viral infection. Any episode can lead to death or developmental delay if severe enough.

Natural history with treatment

Normal IQ and development are possible. Severe hypoglycemic episodes may result in seizures and mental retardation.

Treatment

Avoidance of fasting. Low fat, protein and high carbohydrate diet. Cornstarch supplementation. Carnitine supplementation. Intravenous glucose to treat hypoglycemia during crisis episodes.

Other

Crises consist of severe acidosis and hypoglycemia treated with IV glucose and bicarbonate administration.

Physical phenotype

Possible microcephaly

Inheritance

Autosomal recessive

General population incidence

Rare

Ethnic differences

No

Population

N/A

Ethnic incidence

N/A

Enzyme location

Liver, fibroblasts and leukocytes

Enzyme Function

Catalyzes the final step of leucine degradation and plays a role in ketone formation.

Missing Enzyme

HMG CoA lyase

Metabolite changes

3-hydroxy-3-methylglutaric acid in urine, increased levels of glutaric and adipic acids may be elevated in urine during crisis, notable absence of ketosis.

Gene

HMGCL

Gene location

1pter-p33

DNA testing available

No

DNA testing detail

N/A

Prenatal testing

Prenatal testing has been accomplished by analysis of metabolites in maternal urine at 23 weeks. Enzyme is active in amniocytes and prenatal testing should be possible using this method.

MS/MS Profile

N/A

OMIM Link

www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=231670

Genetests Link

www.genetests.org

Support Group

Organic Acidemia Association

www.oaanews.org

Save Babies through Screening Foundation

www.savebabies.org

Genetic Alliance

www.geneticalliance.org